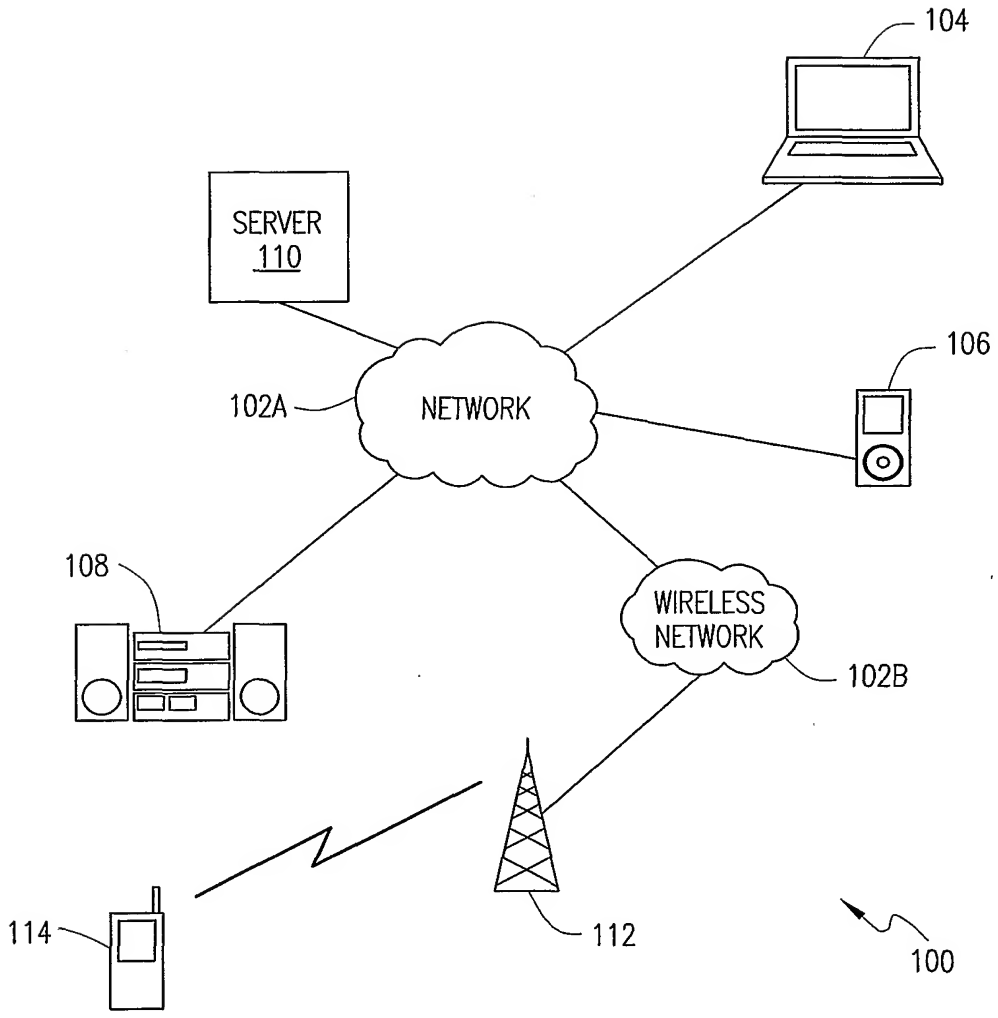
104
SERVER
110
106
102A
NETWORK
108
WIRELESS
NETWORK
102B
114
112
100

FIG. 1

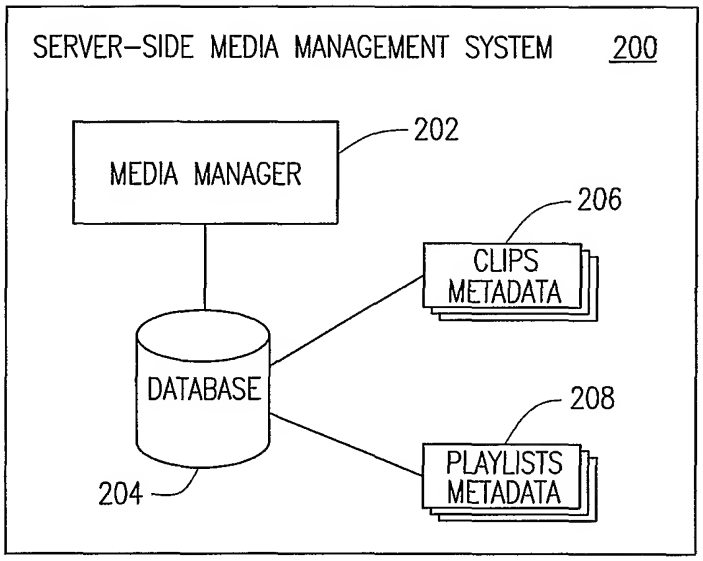
SERVER–SIDE MEDIA MANAGEMENT SYSTEM 200
MEDIA MANAGER
202
206
CLIPS METADATA
DATABASE
208
PLAYLISTS METADATA
204

FIG. 2

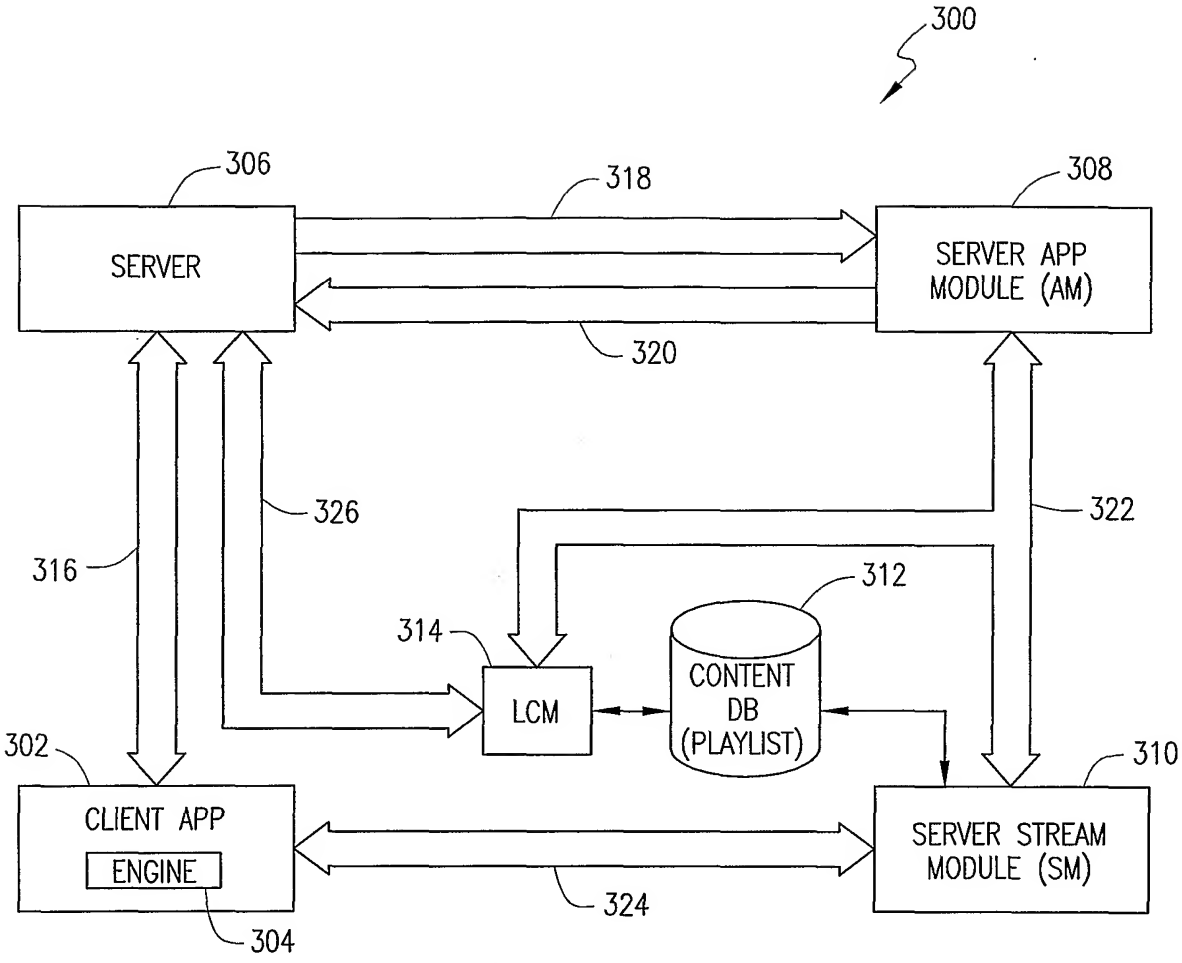
300
306
318
308
SERVER
SERVER APP MODULE (AM)
320
326
322
316
312
314
CONTENT DB (PLAYLIST)
LCM
302
310
CLIENT APP
ENGINE
SERVER STREAM MODULE (SM)
324
304

FIG. 3

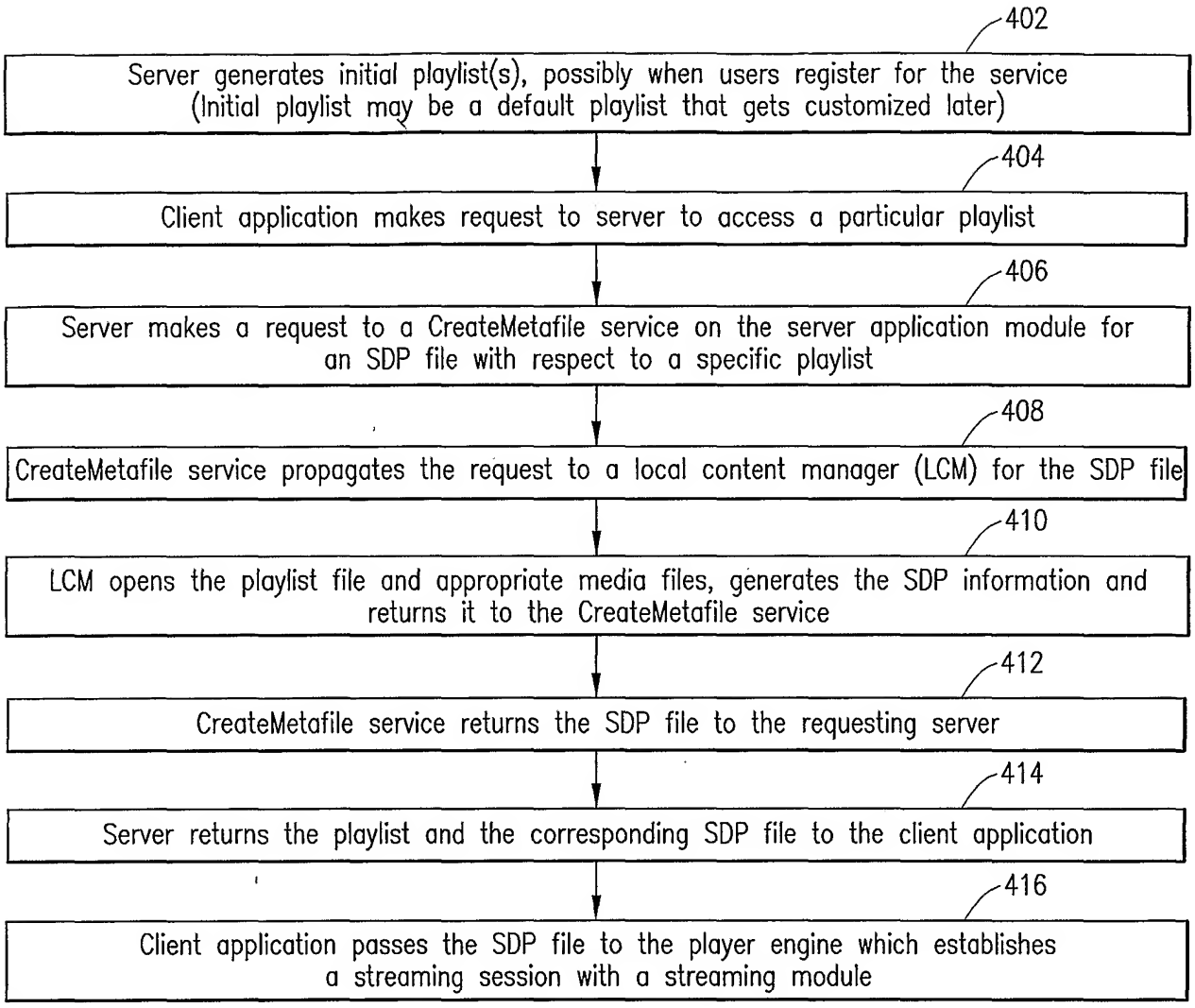
402
Server generates initial playlist(s), possibly when users register for the service (Initial playlist may be a default playlist that gets customized later)
404
Client application makes request to server to access a particular playlist
406
Server makes a request to a CreateMetafile service on the server application module for an SDP file with respect to a specific playlist
408
CreateMetafile service propagates the request to a local content manager (LCM) for the SDP file
410
LCM opens the playlist file and appropriate media files, generates the SDP information and returns it to the CreateMetafile service
412
CreateMetafile service returns the SDP file to the requesting server
414
Server returns the playlist and the corresponding SDP file to the client application
416
Client application passes the SDP file to the player engine which establishes a streaming session with a streaming module

FIG. 4

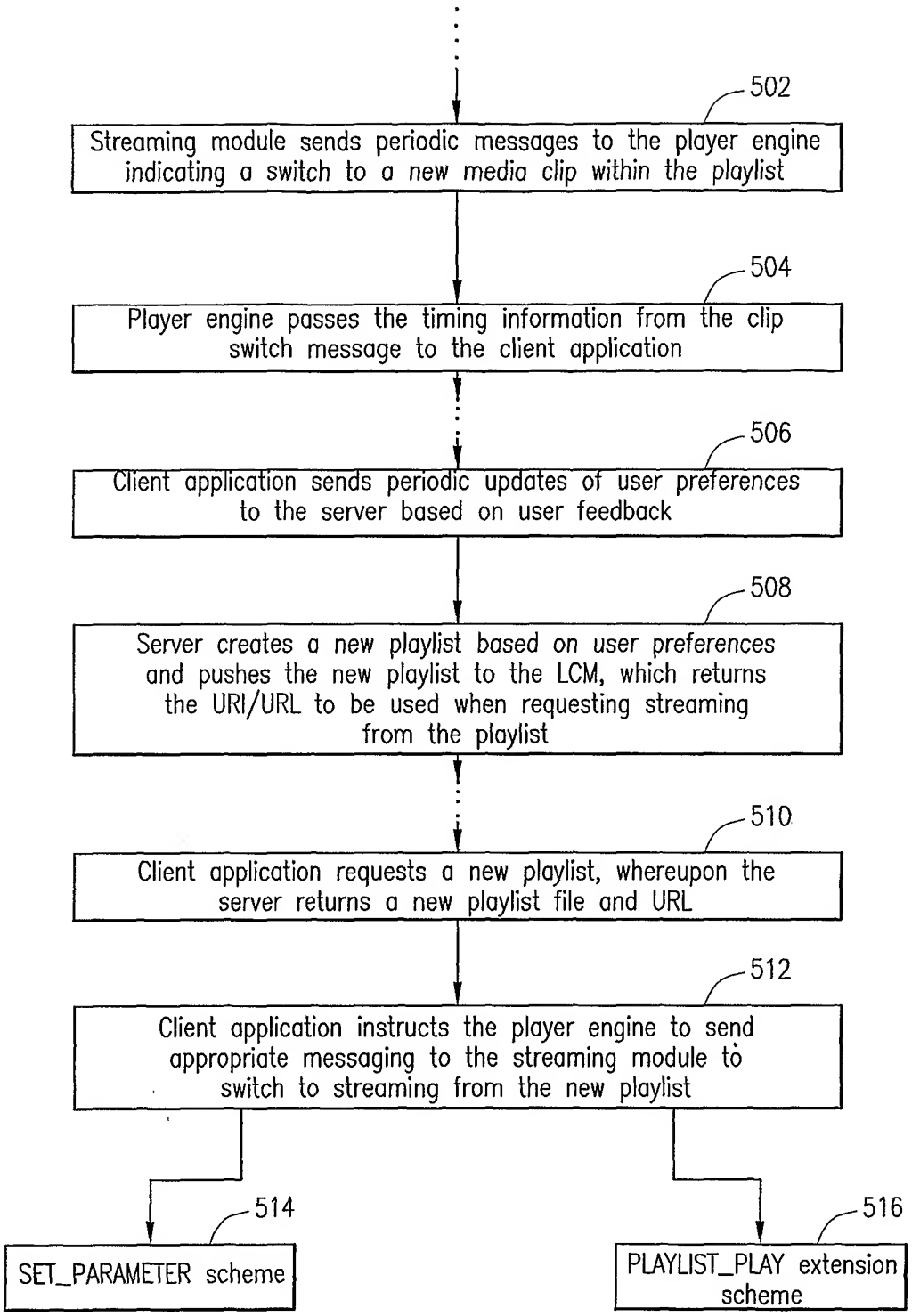
502
Streaming module sends periodic messages to the player engine indicating a switch to a new media clip within the playlist
504
Player engine passes the timing information from the clip switch message to the client application
506
Client application sends periodic updates of user preferences to the server based on user feedback
508
Server creates a new playlist based on user preferences and pushes the new playlist to the LCM, which returns the URI/URL to be used when requesting streaming from the playlist
510
Client application requests a new playlist, whereupon the server returns a new playlist file and URL
512
Client application instructs the player engine to send appropriate messaging to the streaming module to switch to streaming from the new playlist
514
SET_PARAMETER scheme
516
PLAYLIST_PLAY extension scheme

FIG. 5

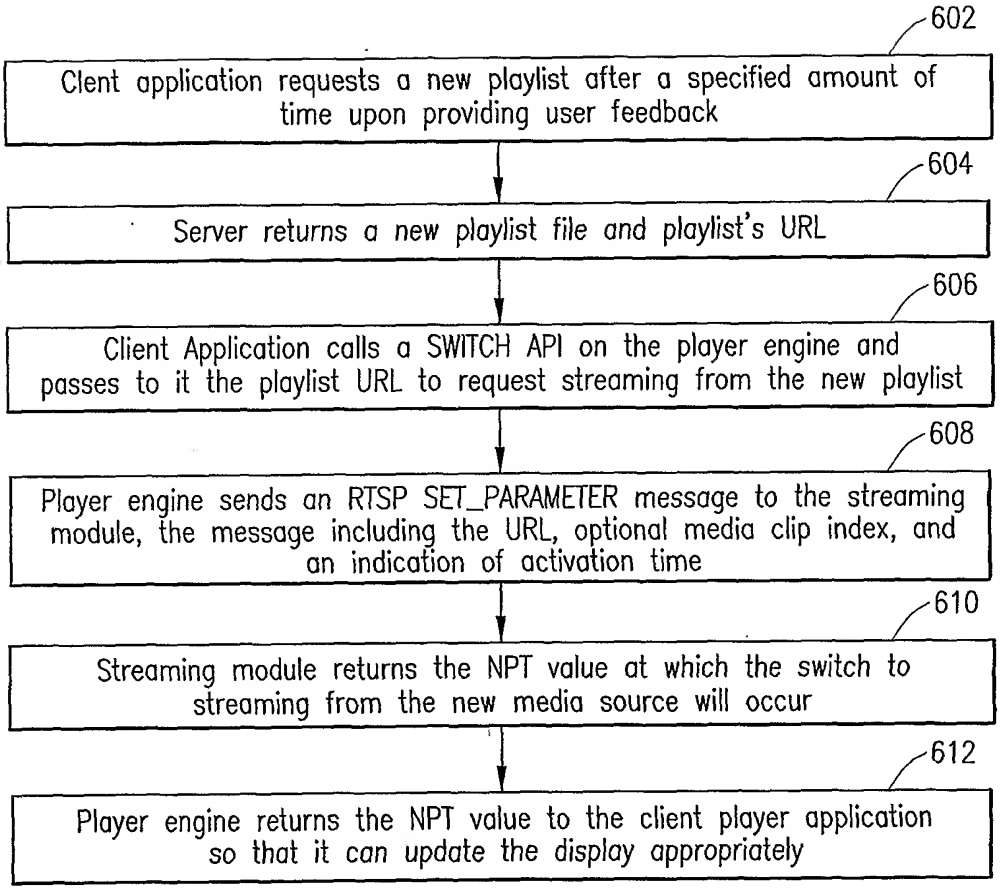
602
Clent application requests a new playlist after a specified amount of time upon providing user feedback
604
Server returns a new playlist file and playlist's URL
606
Client Application calls a SWITCH API on the player engine and passes to it the playlist URL to request streaming from the new playlist
608
Player engine sends an RTSP SET_PARAMETER message to the streaming module, the message including the URL, optional media clip index, and an indication of activation time
610
Streaming module returns the NPT value at which the switch to streaming from the new media source will occur
612
Player engine returns the NPT value to the client player application so that it can update the display appropriately

FIG. 6

CLIENT REQUEST

```
SET_PARAMETER rtsp://example.com/public/foo RTSP/1.0
CSeq: 7
Session: 1234567890
Content-length: 40
Content-type: text/parameters
playlist_url: /public/foo/foo1.ply
clip_index:  8
clip_offset:  0
activate: End Of Clip
```

702

STREAMING MODULE RESPONSE

```
RTSP/1.0 200 OK
CSeq: 7
Session: 1234567890
Content-length: 24
Content-type: text/parameters
playlist_url: /public/foo/foo1.ply
clip_index:  8
clip_offset:  0
clip_ts: 65000
```

704

STREAMING MODULE SET_PARAMETER REQUEST

```
SET_PARAMETER rtsp://example.com/public/foo RTSP/1.0
CSeq: 8
Session: 1234567890
Content-length: 24
Content-type: text/parameters

playlist_play_time=</foo1.ply, 6, 0>
presentation_npt_time: 65000
```

706

CLIENT RESPONSE

```
RTSP/1.0 200 OK
CSeq: 8
Session: 1234567890
```

708

FIG. 7

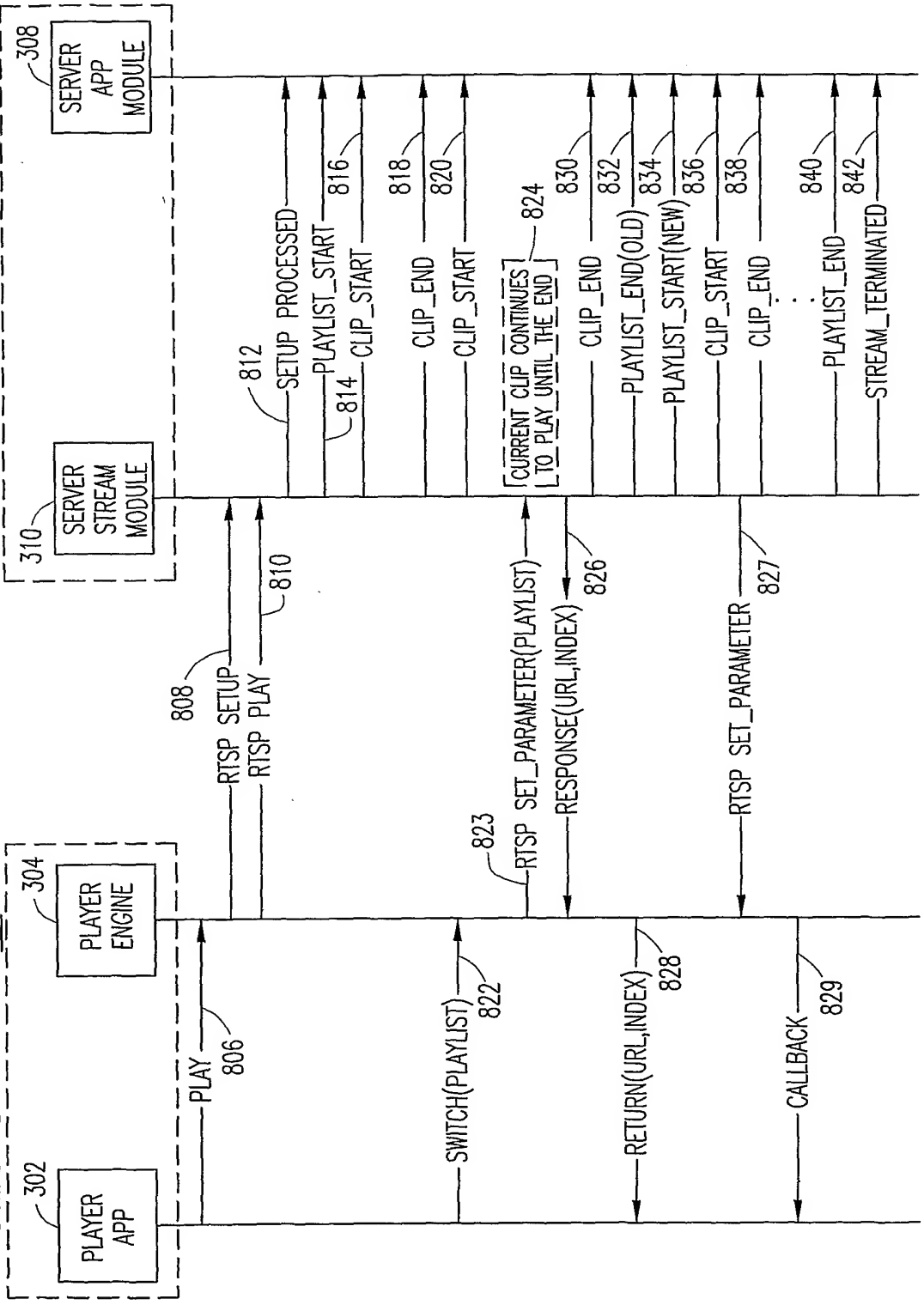
DIGITAL MULTIMEDIA DEVICE 802
PLAYER APP
302
PLAYER ENGINE
304
NETWORK NODE 804
SERVER STREAM MODULE
310
SERVER APP MODULE
308
PLAY
806
RTSP SETUP
808
RTSP PLAY
810
SETUP PROCESSED
812
PLAYLIST_START
814
CLIP_START
816
CLIP_END
818
CLIP_START
820
SWITCH(PLAYLIST)
822
RTSP SET_PARAMETER(PLAYLIST)
823
CURRENT CLIP CONTINUES TO PLAY UNTIL THE END
824
RESPONSE(URL,INDEX)
826
CLIP_END
830
PLAYLIST_END(OLD)
832
PLAYLIST_START(NEW)
834
CLIP_START
836
CLIP_END
838
RETURN(URL,INDEX)
828
RTSP SET_PARAMETER
827
PLAYLIST_END
840
STREAM_TERMINATED
842
CALLBACK
829

FIG. 8